

Appl. No. 09/903,680
Response dated January 26, 2004
Reply to Office Action of January 7, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended) An apparatus for manufacturing a resin-impregnated cured sheet, characterized by comprising conveyance means for conveying a long uncured fiber sheet which is obtained by using short fibers to make paper and which contains uncured resin; and resin curing means for curing the uncured resin of the uncured fiber sheet,

wherein the conveyance means is equipped with at least one rotation belt set comprising a drive roll, a follower roll, and an endless belt which is put on and around the drive roll and follower roll, wherein the resin curing means includes a pair of heating and pressuring rolls which are arranged so as to nip the uncured fiber sheet through the endless belt.

Claim 2 (previously presented): An apparatus for manufacturing a resin-impregnated cured sheet comprising conveyance means for conveying a long uncured fiber sheet which is obtained by using short fibers to make paper and which contains uncured resin; and resin curing means for curing the uncured resin of the uncured fiber sheet,

wherein the conveyance means is equipped with at least one rotation belt set comprising a drive roll, a follower roll, and an endless belt which is put on and around the drive roll and follower roll, and

wherein the resin curing means is provided with a heating liquid pressure device which is arranged so as to nip the uncured fiber sheet through the endless belt.

Claim 3 (original): An apparatus for manufacturing a resin-impregnated cured sheet according to claim 1 or 2, wherein the conveyance means is equipped with a least

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two upper and lower rotation belt sets which are arranged in a paired manner so as to sandwich a conveyance path of the uncured fiber sheet.

Claim 4 (previously presented): An apparatus for manufacturing a resin-impregnated cured sheet according to claim 2, wherein the resin curing means includes a pair of heating and pressuring rolls which are arranged so as to nip the uncured fiber sheet through the endless belt.

Claim 5 (canceled).

Claim 6 (previously presented): An apparatus for manufacturing a resin-impregnated cured sheet according to claim 1 or 2, wherein the resin curing means is equipped with at least a preheating section and a heating and pressuring section.

Claim 7 (previously presented): A method for manufacturing a resin-impregnated cured sheet using the apparatus for manufacturing the resin-impregnated cured sheet according to any one of claims 1 or 2, characterized by including steps of continuously producing a long cured fiber sheet by curing the uncured resin of the long uncured fiber sheet and winding up the long cured fiber sheet.

Claim 8 (original): A method for manufacturing a resin-impregnated cured sheet according to claim 7, wherein the fiber-made sheet which is obtained by using short fibers to make paper contains a carbon short fiber and an organic polymer-based binder.

Claim 9 (previously presented): An apparatus for manufacturing a carbonaceous material sheet by carbonizing a resin-impregnated cured sheet produced by curing a long uncured fiber sheet which is obtained by using short fibers to make paper and which contains uncured resin, the apparatus comprising a carbonization treatment chamber for carbonizing the resin-impregnated cured sheet while continuously transferring the resin-impregnated cured sheet in a horizontal direction, and guide rolls which are arranged in the carbonization treatment chamber.

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Claim 10 (original): An apparatus for manufacturing a carbonaceous material sheet according to claim 9, further comprising a winding device in which a trimming cutter for trimming both side edges of the carbonaceous material sheet, a press roll for retaining a winding face pressure, and a winding shaft are arranged in order along a running path of the carbonaceous material sheet.

Claim 11 (original): A method for manufacturing a carbonaceous material sheet, characterized by including steps of: continuously producing a long resin-impregnated cured sheet by curing uncured resin of a long uncured fiber sheet by using an apparatus for manufacturing a resin-impregnated cured sheet, comprising conveyance means for conveying a long uncured fiber sheet which is obtained by using short fibers to make paper and which contains uncured resin; and resin curing means for curing the uncured resin of the uncured fiber sheet wherein the conveyance means is equipped with at least one rotation belt set comprising a drive roll, a follower roll, and an endless belt which is put on and around the drive roll and the follower roll; and continuously producing a carbonaceous material sheet by carbonizing the long resin-impregnated cured sheet by using the carbonization apparatus according to claim 10, and then winding up the carbonaceous material sheet.

Claim 12 (original): A method for manufacturing a carbonaceous material sheet according to claim 11, wherein the fiber-made sheet which is obtained by using short fibers to make paper contains a carbon short fiber and an organic polymer-based binder.

Claim 13 (original): A method for manufacturing a carbonaceous material sheet according to claim 11 or 12, wherein an average diameter of the carbon short fiber is less than 5 μm .

Claim 14 (original): A method for manufacturing a carbonaceous material sheet according to any one of claims 11 to 13, wherein a carbonization yield of the organic polymer-based binder is 40% by weight or less.

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Claim 15 (original): A method for manufacturing a carbonaceous material sheet according to any one of claims 11 to 14, wherein the resin-impregnated cured sheet is produced by preliminarily heating the fiber sheet which is impregnated with the uncured resin and then heating and pressuring it.

Claim 16 (original): A method for manufacturing a carbonaceous material sheet according to claim 15, wherein a temperature at the heating and pressurizing is higher than a preheating temperature by 50°C or more.

Claim 17 (currently amended): An apparatus for manufacturing a resin-impregnated cured sheet according to claim 1 or 2, wherein said apparatus further comprises a winding device in which a trimming cutter for trimming with both side edges of the resin-impregnated cured sheet, a press roll for retaining a winding face pressure, and a winding shaft are arranged in order along a running path of the resin-impregnated cured sheet.

Claim 18 (previously presented): An apparatus for manufacturing a resin-impregnated cured sheet according to claim 17, wherein the resin curing means includes pairs of the heating and pressuring rolls which are arranged so as to nip the uncured fiber sheet through the endless belt.